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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL First RELEASE Fri., Apr. 1.

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NOT FOR PUBLICATION

SHORT COURSE: Diseases of Dairy Cattle.

LECTURE No. 2: Milk Fever.

ANNOUNCEMENT: Now we've come again to our regular Friday class of the United States Dairy Farm School. Last week, you remember, the course on cow diseases was started with a lesson on tuberculosis. This week milk fever will be the subject for discussion. You can get the previous lessons of this school in printed form by writing to this station.

(The characters speaking during this lecture are: The Doctor himself; and Wilson and Coleman, members of the class.)

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(Three or four raps -- as if on desk)

THE DOCTOR: The class will be in order! -------

Members of the class will please find seats!---------

As you all know, probably from experience, milk fever is a very common disease of dairy cattle.

Therefore, a better understanding of its prevention and treatment is highly important to you dairy farmers.

Of course, the actual treatment of cows with milk fever should be given by a competent veterinarian. If your cow gets down with this disease, call the doctor. He's better able to recognize complicated symptoms which might arise -- and better able to treat them in case they do -- (As if interrupted) Well -- Wilson?

WILSON: Cows don't run a very high temperature with milk fever, do they?

THE DOCTOR: No. The name's misleading. In fact, fever is usually absent. More often than not, the body temperature of the cow goes down instead of up. The disease is in reality a form of paralysis incident to calving. It generally comes on within a couple of days after the birth of the calf.

COLEMAN: Doctor, what are the first symptoms of it?

THE DOCTOR: Well, Coleman, the cow becomes restless. She switches her tail, stares around the stall or walks about uneasily. She may bellow occasionally and show some signs of colic -------

COLEMAN: That would take pretty close watching -- to notice that ---

THE DOCTOR: Yes. Those symptoms are seldom recognized by owners, but a few hours later the paralysis begins.

COLEMAN: Where does it show first?

THE DOCTOR: It's shown by a staggering gait in the hind legs. And a weakening of the knees and fetlocks in front. Finally, the cow goes down and can't get up.

While she's down, she usually turns her head to the side --- usually the left side. She rests her head against her chest ---- causing a slight arching of her neck.

In typical cases of milk fever, the hind legs extend forward and outward. Her position is characteristic of the disease --- it helps a good deal in the diagnosis. When she's down that way, she doesn't pay any attention to her surroundings ---- Yes?

WILSON: What causes milk fever, Doctor?

THE DOCOTR: Well, for many years we didn't know. Now, however, it is believed to be caused by a lack of glucose -- a form of sugar -- in the blood. In recent investigations of the disease, a glucose solution was introduced into the blood of cows affected with milk fever. After that, the cows recovered rapidly ------

COLEMAN: Is that the treatment ordinarily used?

THE DOCOTR: No. The most common method of treating milk fever is by injecting sterile atmospheric air into the udder. This air treatment is not only simple, but it's highly effective.

COLEMAN: Isn't there danger of injuring the cow that way?-- or setting up complications?

THE DOCTOR: Not if you give the treatment properly. But it's important that you take sanitary precautions. You should use a well-made, milk-fever outfit--.

COLEMAN: Where could you get an outfit?

THE DOCTOR: Some cases have been cured with homemade outfits ---but you can get good ones from veterinary supply houses. They are also advertised in the leading dairy periodicals.

COLEMAN: Suppose after you pump the air into the cow's udder, she doesn't get better?

THE DOCTOR: In case you don't see any improvement within five hours, you should repeat the treatment --- with the same sanitary precautions.

COLEMAN: How about giving medicine?

THE DOCTOR: Well, that's sometimes desirable in advanced cases --- But in giving medicines by the mouth, you'd better have an expert and experienced veterinarian. It takes great care in the administration of medicine by the mouth to prevent the fluids from entering the larynx and from there reaching the lungs--- Well?

WILSON: How long does it take for the cow to get well?

THE DOCTOR: The next day after the onset of the disease the cow may be up and eating and drinking in a normal way. In fact, in some cases she may be up in a few hours. In other cases, however, there is a slight paralysis of the hind quarters. That may last for a week or even longer.

You know, before we learned to treat milk fever by injection of the udder, it was considered a very serious thing. Anywhere from 40 to 70 per cent of the cows affected died of it. But now 95 per cent of the cows recover.

WILSON: It's mostly mature cows that have milk fever, isn't it, Doctor?

THE DOCTOR: Oh, yes. It's most common among cows having their fourth, fifth, or sixth calf. Heifers and young cows are not often affected.

WILSON: Is there anything you can do to prevent it?

THE DOCOTR: There are several things that are helpful. One is to give cows plenty of exercise up to the time of calving.

The common practice of putting a cow about to calve into a stable tends to invite the disease.

Another practical precaution is to allow a susceptible cow to keep all her milk in her udder for 24 hours after calving --- all except the small quantity needed by the calf. And, if possible, the calf's milk should be taken from each quarter of the udder.

WILSON: Just what's the idea in that, Doctor?

THE DOCTOR: When the milk is left in the udder, the udder is distended as it is in the air treatment. That distention acts as a preventive of milk fever.

But Wilson, if you'd like to have the details of treatment on hand, you might write to the U.S. Department of Agriculture for their free bulletin on Milk Fever, Its Simple and Successful Treatment.

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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM..... RELEASE.....

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U. S. RADIO FARM SCHOOL. Second Fri. Apr. 1.

SHORT COURSE: Dairy Products.

LECTURE No. 2: Butter Working and Printing.

ANNOUNCEMENT: The second topic of the United States Department of Agriculture Dairy Farm School this evening has to do with butter making. Last week, the class discussed churning. Other steps in the process are scheduled for today. And remember there are still copies of those 24 free booklets containing the 216 printed radio lessons for those who request them through this station.

(The characters speaking during this lecture are: The Professor himself; and Colton and Bullock, members of the class.)

THE PROFESSOR: Well, Colton, where did we leave off last time?

COLTON: We were talking about churning------ Oh, yes!; You were going to tell us why we don't get butter --- sometimes when we churn for hours ----

THE PROFESSOR: Yes, I believe I told you -- sometimes it's because the temperature is too low. Under exceptional conditions, you may have to raise it to between 65 and 70 degrees.---

COLTON: Sometimes cream won't make butter because it's too thin ---

THE PROFESSOR: Yes. Or too rich -- or too sweet. It should contain about 30 per cent butterfat. And it will churn more easily, if it's ripened to a moderate acidity.

COLTON: Wouldn't filling the churn too full cause trouble? ---

THE PROFESSOR: Yes. The churn should not be more than one-third full--- if the cream's to get the proper agitation. Ropy fermentation will also interfere with agitation. But you can avoid that by sterilizing all the utensils -- and producing the milk and cream under the most sanitary conditions. If that doesn't prevent ropy fermentation, you should pasteurize the cream, protect it from contamination, and ripen it with a good starter-- (As if interrupted) What is it, Bullock?

BULLOCK: Professor, the trouble's not always with the churning --- some cows' milk just naturally won't churn easily ----

THE PROFESSOR: Well, in that case, get some cream from a cow recently fresh, or some cream you know will churn easily. Then before you ripen it, mix the cream that's easy to churn with the cream that's hard to churn.

You have to do that with cream from a cow that's far advanced in the milking period. Milk from such a cow is often hard to churn --- but you make it easier by mixing it with cream from a cow that is not far advanced in the period of lactation.

And feeds that produce hard fat are another cause of failure to obtain butter. Such feeds as cottonseed meal and timothy hay, for instance. In that case, you'll have to change the feed. Linseed oil meal, gluten feed, and succulent feeds, such as silage and roots tend to overcome the condition.

You should remember, too, that feeds have an influence on the firmness of the butter. When cows are fed a ration made up largely of cottonseed meal, the butter is firm, brittle, and greasy. It is said to have a "cottonseed meal body." On the other hand linseed oil meal, ground soybeans, and succulent feeds, such as pasture grasses, tend to produce soft bodied butter.

Of course, you all know that, aside from feed, one of the most important factors in determining the body of butter is the way it's worked. You know what properly worked butter is like, don't you Bullock?

BULLOCK: Sure. Properly worked butter has a waxy body and bright appearance. Overworked butter is sticky and salvy. It looks dull and greasy and underworked butter is brittle -- sometimes it's mottled and uneven in color.

Properly worked butter is the kind that feels cool and melts fast in your mouth.

THE PROFESSOR: Yes. Butter has the proper grain if a slab of it breaks when it's bent at an angle of about 45 degrees, and the broken surface

looks like broken steel.-- Butter that is cold and very firm, you understand, takes more working than that which is comparatively soft. But you have to use your judgment to avoid overworking it.

Now then, Colton, suppose you tell how you go about washing, working, and salting your butter?

COLTON: Well, I use about twice as much pure, clean water as I've got buttermilk. I have it at about the same temperature, too. I just draw a pail of water, and take its temperature with a thermometer. Of course, if the grains of butter are too hard I make the water a little warmer than the buttermilk. (If the butter is too soft,) I make the wash water a little colder.

THE PROFESSOR: Yes. I want you all to remember that the only way to get the buttermilk out completely is to wash the butter when it's in little grains so that the largest possible surface is exposed to the water. Trying to get the buttermilk out by working it out won't do. And what's more, too much working will injure the grain and body of the butter -- All right, Colton, go ahead ---

COLTON: Well, after the buttermilk has drained off, I put the cork back in the drain hole, pour half the wash water into the churn, fasten on the cover, and then turn the churn fast about four times, just as if I was churning.

THE PROFESSOR: That's good. You should be careful not to overchurn, however. The butter should be in small separate grains after the washing is over --- Yes?---

COLTON: Then I draw off the water and pour in the other half of the wash-water. Two washings are enough. The second water usually comes off nearly clear. While the water is draining off, I rinse the worker with hot water and then enough cold water to chill it thoroughly ----

THE PROFESSOR: Then you are ready for salting, huh? How much salt do you use?

COLTON: About three-quarters of an ounce for each pound of butter ---

THE PROFESSOR: Well, go ahead and work in the salt.

COLTON: Well, I take the grains of butter out of the churn. I spread them about two inches thick on the worker. Then I sprinkle fine salt on them ---

THE PROFESSOR: You use the best grade of butter salt, I suppose?

COLTON: Yes, sir. Then I work the butter to mix the salt through it -- so it will have a solid waxy body.

THE PROFESSOR: You do that by pressing on the lever, I take it.

COLTON: Yes -- I'm careful not to rub or smear it. After I press it into a thin layer, I fold it on itself and press it again. I keep that up until the salt is dissolved and evenly distributed throughout the butter -- until the butter gets waxy.

THE PROFESSOR: Now Bullock, how would you pack it for market?

BULLOCK: On our place, Professor, we pack the butter in glazed earthenware crocks --- We are careful not to use crocks with any of the glazing scaled off --- because an old crock like that will start bad flavors.

THE PROFESSOR: Yes -- And if you sell butter, you'll find it more satisfactory to use the 1 pound print. It makes a more attractive package than the crock or the country roll either.

After a little experience with a 1-pound printer you can make 1-pound prints more quickly than country rolls. You can regulate the printer so that the butter will weigh exactly 1 pound, if you are careful to avoid air pockets. Prints for market should be wrapped in white parchment paper 8 by 11 inches in size. Then they should be put in a paraffined carton. After being printed and wrapped put the butter in a refrigerator or other cool place.

UNITED STATES DEPARTMENT OF AGRICULTURE
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PROGRAM..... RELEASE.....

U. S. RADIO FARM SCHOOL FIRST Mon., Apr. 4

SHORT COURSE: Livestock Equipment.

LECTURE No. 3: Watering Devices, Vats and Wallows.

ANNOUNCEMENT: Last week, you remember, the equipment course of the United States Livestock School was given over to a discussion of creeps and self-feeders. But before we open the class-room, so you can hear what the Professor is going to say about hog wallows, dipping vats, and watering devices, let me remind you that the Department of Agriculture still has some of those free booklets with 216 raidó lessons in printed form. You can get them by asking for them through this station.

(The characters speaking during this lecture are: The Professor himself; and Tarlton and Owens, members of the class.)

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THE PROFESSOR: Tarlton! ---

TARLTON: Here I am, Professor ---

THE PROFESSOR: Just step there to the blackboard --- Draw us a diagram -- of a concrete dipping vat for hogs ----------

Now then, Hendricks --- Suppose you go over there to the other board. make us a picture of a steer and three water barrels -----

That's all right -- about why I want it --- just do as I tell you -------

Well, Owens, what do you want?

OWENS: My neighbor has been advising me to do away with the mud wallow in my hog lot ----

THE PROFESSOR: Your neighbor is just right --- there is little to recommend wallows as part of hog-farm equipment -----

OWENS: You'd use concrete wallows wouldn't you?

THE PROFESSOR: If I used any at all, I would --- but at best, wallows become filthy in a little while. In hot weather, the warm stagnant water is of little value - in making hogs comfortable ---

If you do use wallows, you should look after them often. And keep them clean. Filling and draining are the important features.

But if you have a big hog lot or field with natural shade -- or with properly made artificial shade; and if you make periodic use of a dipping vat -- you won't need wallows.---

-------- Have you finished that drawing, Tarlton?

TARLTON: Yes, sir. All except putting in the dimensions ---

THE PROFESSOR: All right, stand aside -- so the class can see --

You all understand, I take it, that dipping vats may be used to apply disinfectants to the entire body -- in cases of exposure to infection. Or they may be used to treat skin diseases. Or they may be used for coating -- the body with oil -- in the control of lice. For lice control the vat should be about three-quarters full. And on top the water, you should have a layer of crude petroleum oil -- about a half inch thick ----

Now if you'll all look at this drawing on the blackboard, you'll see how a dipping vat--should be built. Tarlton has done a good job. ---- Owens, what would you say is the important thing to consider -- in building a dipping vat?

OWENS: It should be big enough to accomodate the biggest hogs in the herd --

THE PROFESSOR: Yes.

OWENS: It should be durable. And it should be made so it can be filled and drained easily --

THE PROFESSOR: Now then - let's look at the diagram. You notice there a sharp decline -- where the hogs enter the vat ---

TARLTON: That's supposed to be about a 45 degree slope -- It's about three feet long ----

THE PROFESSOR: Then there's the bottom of the vat ---

Tarlton: That's twelve feet long ---- You'll notice it's graded to a trap at one end - for emptying.

THE PROFESSOR: Then, you see, there a long slope at the end where the hogs climb out ---

TARLTON: That's 9 feet long. It's a 20 degree slope.

THE PROFESSOR: Then the entire length is about 24 feet and the bottom 12 feet?

TARLTON: Yes, sir. And the depth, inside measurement, is 4½ feet. The width at the bottom is 18 inches and at the top it's 30 inches.

THE PROFESSOR: That's good. When dipping vats are too short, too shallow, or too narrow, they may prove dangerous. The result may be the injury or death of the hog --- But what's that thing over the approach to the vat ---

TARLTON: That's a hooded cover -- to prevent too much splashing -- when the hogs enter the dip ----

THE PROFESSOR: Good! You should all bear in mind -- hogs should be dipped on bright, warm days --- and early enough -- to dry off before sundown. If they go into their shelters wet, they are uncomfortable -- they may get sick.

TARLTON: Professor, in that diagram -- I should have had a concrete space all around the vat -- to catch the drippings from the hogs -- and make the liquid run back into the vat --- I didn't know just how to show it.

THE PROFESSOR: Well, any member of the class - who wants complete details - can get them by writing to the United States Department of Agriculture --- Just ask for Farmers' Bulletin 1-4-9-0 on Hog-Lot Equipment. The Department also has designs for a hog trough which the hog can neither upset nor put his feet in. All watering troughs and tanks should be easily cleaned and substantial enough that the animals will not turn them over.

Now then Hendricks - I think anybody would recognize your picture of a steer and the three water barrels. Draw a line across the middle of that third barrel --- we'll say it's half full.

OWENS: What's the idea, Professor?

THE PROFESSOR: I just want to emphasize to the class the importance of plenty of water. We'll mark that steer "1,000 pounds". A steer that size is made up of 600 pounds of water --- every 100 pounds of that animal contains about 60 pounds of water. That is, for a 1000 pound steer, about two and a half barrels of water. It's no wonder that a mature beef animal will drink from 10 to 15 gallons of fresh water every day, to keep in health and good spirits. Of course, all animals need more water in hot weather --- (As if interrupted) Yes?

OWENS: Hogs are likely to drink too little - in very cold weather --

THE PROFESSOR: Yes, in such cases it pays to heat the water -- until it's warm enough for them.

As you all know, horses need more water when doing hard work than when idle. Naturally, a ration of timothy hay and oats calls for a shorter time between drinks - than when a horse spends some time on pasture and thus has more succulent feed.

TARLTON: Sheep can get along without much water -- except what they get from the dew on the grass -- Can't they?

THE PROFESSOR: Well, sheep come nearest to being camels -- of any farm animals. But good shepherds see that their flocks are supplied with fresh water every day. A ewe will drink from one to four quarts a day; - depending on the weather and feed ---

OWENS: Isn't there danger of stock over drinking?

THE PROFESSOR: It's very rare. Irregular salting may cause over drinking --- And a horse shouldn't be given his fill when he's hot from work. But, as a general rule, if you'll give your stock ready access to fresh water --- they'll take care of the rest.

Next to having it plentiful and convenient, it is of prime importance to have it fresh and pure. If some of you had to drink from the mud holes which you turn your hogs and cattle to, there'd be more pumping. Running streams are much safer then ponds -- unless the streams run through a farm where the animals have disease. Don't forget, besides being distasteful - impure water may be the means of a bad outbreak of disease -------

Tarlton, did you ever notice an old horse drinking when he had his feet in the creek?

TARLTON: Yes, sir. He always drinks upstream.

THE PROFESSOR: Well --- Use horse sense --- Give your stock the best water available.

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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM..... RELEASE.....

U. S. RADIO FARM SCHOOL SECOND Mon., April 4.

Not for Publication

SHORT COURSE: Work Horses and Mules.

LECTURE No. 3: Harness and Hitches.

ANNOUNCEMENT: Now we come to the third of the Livestock Farm School's series of four lessons on Work Horses and Mules. Last time, you recall, the Professor discussed breaking and training of colts. This evening he will continue the course with a discussion on ----- but, just one moment and you can hear for yourselves what he has to say.

(The characters speaking during the lecture are: The Professor himself; and Tabb and Nelson, members of the class.)

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TABB: Isn't the Professor here, Nelson?

NELSON: Not yet -----

TABB: I was afraid I'd be late --

NELSON: What if you were? -

TABB: I understand he's going to talk about fitting harness -- I didn't want to miss it. My horse, Jake, has a bad skinned place on his shoulder now -- where his collar rubs --

NELSON: Speaking of harness, Tabb, did you see that demonstration -- the other day?

TABB: What demonstration?

NELSON: The one the county agent gave -- on big teams and hitches?--

TABB: Naw -- Give me two good horses and a plow -- and I can run a furrow with the best of 'em --- but I'm not strong for these fancy hitches.

NELSON: Why not plow two or three rows at once? As the county agent said, it's practical and it keeps down costs --

TABB: Those big hitches are a lot of trouble ----- They're pretty complicated, ain't they?

NELSON: No. They're simple. He showed us how to hitch three, four, five, six, eight and more horses. It wasn't any more trouble than a two or three horse team -----

TABB: How did he do it?

NELSON: Oh, by a system of bucking in and tying back --- and the use of hitches which do away with side draft -------

(Three or four raps -- as if on desk)

THE PROFESSOR: The class will be in order! -----

You all realize, I suppose, that all parts of the harness -- should fit the horse -- comfortably. It is especially important for the collar to fit; so that, when it is adjusted, the pull will be -- distributed equally -- over the shoulders. The best plan is to have a good, heavy, leather collar for each horse --- and always use his own collar on him --- (As if interrupted) Well, Tabb? What is it?

TABB: How should the collar fit, Professor?

THE PROFESSOR: Well, to fit, there should be barely room for your flat hand -- to pass between the collar -- and the horse's windpipe. And there should be just enough room -- for the finger tips -- to pass at the side of the neck -- just above the shoulder points.

You know, a short collar chokes the horse -- when he's pulling. A long collar bruises the shoulder points -- and chafes the neck -- at the withers. A narrow collar pinches. While a wide collar presses on the side of the shoulder and irritates it.

The hames should fit snugly. They should be drawn tightly on the collar; so that the point of draft -- will be about -- one third the distance -- above the point of the shoulder.

All other parts of the harness should be properly adjusted and fitted. In adjusting the bridle, the bit should rest snugly on the bars of the mouth. The checkrein should be used but mildly ----- Well?

NELSON: Should the body parts of the harness fit snugly?

THE PROFESSOR: Yes ---- but, of course, not so snugly as to retard free, full motion, Adjust your lines and traces for perfect control --- and an even pull.

TABB: Professor, I fit my harness like you say -- but the collar has made a sore on my horse's shoulder -------

THE PROFESSOR: Well, Tabb, maybe you didn't allow for excess hair and surplus flesh. In fitting a new collar in the spring, you should always take the condition of the horse into account.

When you take the harness off, clean the face of the collar - and other bearing surfaces -- with a damp cloth. That'll keep those parts smooth and firm -- and so help prevent galls and sore shoulders. And, not only that, but it will also add to the life of the leather.

You know, many collars are broken and ruined by careless handling. A little care in taking off the collar, keeping it in shape, and hanging it on a peg or rack by itself will prolong its life greatly. When harness is not in use, you should hang it up carefully in a dry room.

Most of your mending, of course, has to be done when the harness breaks. But it's well to go over the harness carefully during dull seasons. Replace the weak parts. Restitch the ripped places. Every farmer should have a harness repair kit; that is a riveting machine, a 4-tube punch, a pair of pliers, awls, an assortment of needles, a ball of good thread with wax, a wood clamp, leather, snaps, buckles, and cleansing and oiling materials.

A thorough overhauling, cleaning and oiling of harness once or twice a year in addition to the daily cleaning of bearing surfaces will help make the harness last longer. At least once a year, you should take the harness apart -- so that you can clean, oil, and repair all the parts thoroughly ----- Well?

NELSON: How's the best way to clean it, Professor?

THE PROFESSOR: Well, soak the harness for about 15 minutes in lukewarm water in which a mild soap has been dissolved. Adding a little soda to the water makes it a better solvent. Scrub each strap carefully. Rinse well. When nearly dry, rub edge blacking on all parts where it's needed. Clean the metal parts. Make any needed repairs -------

NELSON: You'd oil the harness while it was still damp, wouldn't you?

THE PROFESSOR: Yes.

NELSON: What kind of oil-- would you use?

THE PROFESSOR: Neat's-foot oil, castor oil, or one of the prepared harness oils.

Any of them should be rubbed in thoroughly --- and be allowed to dry slowly. When the oil has dried, you can rub the straps well with a lather made of white castile soap, or a good harness soap. That will remove

the surplus grease and take away that greasy appearance. With regular care, the leather will be clean and pliable. Frequent sponging will keep the harness like new.

Now then, next week, we will conclude this short course with a talk on the training of saddle horses. I'll also have some questions to ask you about how to tell a sound horse. So come to class prepared to recite.

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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

SOWING YOUR TAME OATS

WEEK OF APRIL 4.

PROGRAM..... RELEASE.....

ANNOUNCEMENT: In this talk, Uncle Sam's special representative, County Agent Robbins, is going to tell his friend, Bill Strong, how to grow oats. The talk is one of the special features released by Uncle Sam through Station_____, and should be of special interest to farmers who had considerable experience with wild oats in their youth.

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Bill Strong -- They tell me, County Agent, that what you don't know about growing oats isn't worth knowing. If that's a fact, you're just the man I want to see. My crop--------

County Agent Robbins -- Don't like to break in, Strong, but they tell me you were quite an authority on wild oats, yourself -- a few years back.

S. -- Sh-h-h-h-h. The less said about that the better, Robbins. But I wish you would tell me some substitute crop for oats. I've been growing oats at a loss up to date, I'm afraid, and am about discouraged with the crop.

R. -- That's not the crop's fault, Bill. It's a fact that we don't generally consider oats a cash crop, but they have a lot of value on the farm anyhow. Personally, I grow oats for the horses, sheep, young stock, and my breeding stock. There's nothing better for bone and muscle building in certain kinds of livestock. Then, oats make a fine crop to round out your rotation system with wheat, corn, and such crops.

S. -- Yes, I know. But if I can't get results with the crop, all these benefits you speak of don't cut much ice, do they?

R. -- I think the reason you're not getting results with your oats, Bill, is because your methods are pretty sloppy.

S. -- Those are harsh words, Robbins. If I'm careless, why is it that

farmers in general -- especially tenant farmers -- complain about the poor oat yields they get?

R. -- Because they try to raise oats as a lazy man's crop. They neglect the crop. They think any old kind of land will grow oats. They don't give any great attention to the seed-bed before they sow the seed. Oats is oats with them, just like pigs is pigs. They think pedigreed seed is another joke the book farmers are trying to spring on them. While the fact is, oats are not only a very valuable feed crop, but make a fine nurse crop as well, and a good planting to fill out the rotation between corn and wheat, or corn and grass.

S. -- Then you think that oats would be as profitable as corn if the crop were given the same attention that corn gets, eh?

R. -- That's debatable, Bill. You've got to remember it takes a lot of time to grow corn, but very little to grow oats. I've heard that it takes only 10 minutes to grow a bushel of oats. I know that it takes 3 or 4 times that long to produce a bushel of corn. As you know, corn has been selling around 75 cents and oats at about 40 cents. That's probably one reason why the crop is neglected.

S. -- I'm beginning to see a great light, Robbins. And I think you lit it. Now tell me how to grow oats right.

R. -- Well, first, choose the variety that's best adapted to your soil and climate. You might write to the Agronomy Division of your State Agricultural College for that information. Second, get your seedbed in proper shape for the seed. The soil should be firm and moist beneath -- with 2 or 3 inches of loose, finely pulverized soil on top. Third, sow the seed early. More grief has come to farmers from late seeding than from any other one practice. Fourth, treat the seed for smut.

S. -- I see. Get the correct kind of oats -- then prepare the seed-bed properly -- then sow early -- and finally treat the seed for smut. Do you clean the seed before you give it the smut treatment?

R. -- It'll pay you to put it through the fanning mill, anyhow. If the oats are light and chaffy, run them through 2 or 3 times. The seed should be carefully graded in order to get a uniform seed which germinates well and produces an even stand.

S. -- Does it really pay to treat the oats for smut, Robbins?

R. -- Does it pay to test your cows for tuberculosis? Does it pay to innoculate your hogs for cholera? Certainly it pays to treat oats for smut.

S. -- What's the best treatment, then?

R. -- Well, Bill, the usual method of soaking the seed in a solution of one pint of formaldehyde in 40 gallons of water, is one of the simplest ways. But the sprinkling method is the standard way and a very good way too. Use a formaldehyde solution made of one pint of formaldehyde in 40 gallons of water. Put the oats in a pile. Then pour the solution in an ordinary garden sprinkling can and sprinkle the oats with the liquid until every kernel is wet. Shovel the oats over and over while you're sprinkling them. Then cover them up with sacks.

S. -- What do you cover the oats with sacks for, Robbins?

R. -- It's this way -- It isn't the formaldehyde solution itself that kills the smut spores, but the formaldehyde gas rising from the solution. This gas does the business. Always make sure to dry the oat seed out well after it has laid under the cover for an hour or two. Seed might not sprout well if it's planted when still moist from the treatment.

S. -- What's this <u>dry process</u> we read about in the farm papers, Robbins?

R. -- They call it <u>dry</u> because you don't use much water. All they do is

mix about one pint of formaldehyde in one pint of water. Then you spray this on the oats with an ordinary spray gun -- while the oats are shoveled over and over rapidly.

There's some danger that this smaller quantity of solution won't reach all the smut spores. Then, too, the gas is hard on the nose and eyes. If you use the dry treatment, watch out for those two things.

S. -- What? The eyes and nose?

R. -- Yes. Also see that you reach all the oat seed in the treatment.

S. -- How can you be sure you're getting full strength formaldehyde, Robbins?

R. -- Buy your formaldehyde in the sealed tin cans. It's always full strength and will keep for a long time. Open the can by punching two holes in the lid. As the can contains just one pint, nothing else is necessary. Just pour it out.

S. -- Is the stuff poison?

R. -- Well, after the grain is dry and has been exposed to the air for some time, it won't hurt chickens, cattle or other stock. It won't injure barrels, buckets, or other containers either -- whether they're wood or metal. Corrode them, I mean.

S. -- Well, Robbins, I reckon that about completes the job doesn't it?

R. -- Yes, SIR. And I'm dead sure you'll have better luck with your oats if you really give them a chance to show what they can do.

S. -- You can be sure I'll give the crop that chance, then. And thanks for the information. So long, Robbins.

R. -- So long, Strong.

---oOo---

ANNOUNCEMENT: That completes Uncle Sam's special oats release. If you have any questions that Robbins didn't answer, write for answers to the U.S. Department of Agriculture, Washington, D.C.

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL FIRST RELEASE Wed., April 6.

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NOT FOR PUBLICATION

SHORT COURSE: Brooding and Rearing Chickens.

LECTURE No. 3: Feeding Baby Chicks.

ANNOUNCEMENT: Well, folks. Have each one of you received those free booklets being sent out by the Department of Agriculture? You know the ones with the 216 printed lessons of the United States Radio Farm School? If you want them, you can get them through this station. Right now, however, the Professor is going to tell the class how to feed baby chicks --- so gather around your radio.

(The characters speaking during this lecture are: The Professor himself; and Doyle and Parker, members of the class.)

****

(Four or five raps -- as if on desk)

THE PROFESSOR: Members of the class will please find seats!

Get your notebooks ready --- We're going to talk feeding -- And you may want to take down some rations.

But, before we go into the rations for baby chicks --- have any of you any questions about feeding --- other than what to feed --------- All right, Parker, what's your question?

PARKER: How many times a day - would you feed baby chicks?

THE PROFESSOR: After the second day, I'd feed the chickens regularly four or five times a day. But I'd feed rather sparingly during the first two weeks.

Regularity in feeding is of great importance. It helps to keep the chicks -- from developing toe-picking -- and other bad habits --- (As if interrupted) Yes?

DOYLE: How about this all-mash system of feeding -- that we've been hearing about for the last year or two? Has that been successful?

THE PROFESSOR: Yes. It has been used successfully. But the practice of feeding both scratch feed and mash is more common. I'd advise the average poultry raiser to follow that mash-and-scratch-feed system.

DOYLE: Would you advise buying commercial mixed mash? Or would you buy separate feed and mix them at home?

THE PROFESSOR: Where only a few chicks are raised, commercial chick mashes are usually used. With large numbers of chicks, however, it is usually advisable to buy separate feeds -- for home mixing.

DOYLE: How about the scratch feed?

THE PROFESSOR: Well, commercial baby-chick scratch may be fed to advantage -- under most conditions. It's rather hard to get the individual grains finely cracked enough for the baby chicks.

The three important points -- in the selection of a baby chick ration - are: First, protein of good quality; second, the proper minerals; and third, a liberal supply of vitamins.

You should remember that --- But now, if you want a good chick mash -- for the chicks during the first two weeks -- just note this down

And please bear in mind, when I say 'parts', I am referring to parts by weight.

All right (Slowly) 4 parts by weight of yellow corn meal; 2 parts rolled oats, 2 parts bran; 1 part middlings; 3/4 part meat scrap; and 1/4 part dried milk.

You know, milk is very important for baby chicks. Supply it to them as a drink for the first 6 or 8 weeks, if you can. Of course, in case you do that, you can leave that one quarter part dried milk out of the mash.

PARKER: What would you use in case you didn't get any milk in the ration?

THE PROFESSOR: Well, if you don't use either dried milk in the ration or feed milk separately, you should increase the meat scrap to 1 part.

In other words, without milk, the mash would be: (Slowly) 4 parts yellow corn meal; 2 parts rolled oats; 2 parts bran; 1 part middlings; and 1 part meat scrap.

DOYLE: How about feeding boiled eggs?

THE PROFESSOR: Yes, boiled infertile eggs are good for baby chicks. You can

mix them in the mash I just gave you. Just leave out the meat scrap and the dried milk. Instead use about six eggs for each 100 chicks each day.

PARKER: How would you feed the mash?

THE PROFESSOR: Feed it twice a day in flat troughs. Alternate with the commercial baby-chick scratch, or, if it's more convenient, with a scratch made of equal parts finely cracked yellow corn and cracked wheat.

DOYLE: Professor, what would you feed them after the first two weeks?

THE PROFESSOR: Change the mash for one made up this way: (Slowly) 4 parts yellow corn meal; 2 parts bran; 1-1/2 parts middlings; 1 part rolled oats; 1-1/4 parts meat scrap; and 1/4 part bone meal.

You can keep this mash before the chicks all the time. Then give them the scratch feed twice a day.

PARKER: The same sort of scratch feed?

THE PROFESSOR: Yes.--- Until the chicks are a month old. Then you can also change the scratch feed -- to a coarser or intermediate chick grain.

At 2 months of age, you can replace that with equal parts of wheat and yellow cracked corn.

And don't forget the other aids to rapid growth. For the best growth of your chicks, you should see that they get green feed, sunlight, and a good grass range.

Chicks confined to small bare yards should always be fed green feed -----Yes?

DOYLE: What kind of green feed?

THE PROFESSOR: Oh --cabbages, lawn clippings, cut alfalfa, cut clover, or sprouted oats. You should also see that they get fine oyster shell, grit and charcoal. Keep a supply of clean drinking water before the chicks all the time. And in doing that, use water receptacles that are arranged so the chicks can't get in the water ---

DOYLE: How about using cod-liver oil? A friend of mine told me the other day it would prevent the chicks getting leg weakness -- while they're in the house and can't get direct sunlight.

THE PROFESSOR: Yes, that's right.

DOYLE: How do you feed the oil?

THE PROFESSOR: Mix it in the mash. Make the mash 2 per cent cod-liver oil. That is, 2 pounds of cod-liver oil for each 100 pounds of mash. That will prevent your early hatched chickens getting leg weakness for lack of sunlight. After the chicks can get out of doors most of the time, you can let up on the oil.

And in mixing the oil, just use enough of the mash for two weeks at a time. Mix the oil with a small quantity of the mash first and then mix that in with the entire batch of feed.----

I want you all to remember that young chicks need careful attention - and good rations - to get them properly started in life ---- (As if interrupted) Well, Parker, What is it, now?

PARKER: You gave us a ration awhile ago --- You said feed it after the second day --

THE PROFESSOR: Yes ---

PARKER: What would you feed -- when the chicks are first hatched?

THE PROFESSOR: Nothing!

PARKER: Nothing?

THE PROFESSOR: Don't you know, Parker, that chicks carry their own rations. Part of the yolk of the egg is absorbed by the chick -- just before hatching. That furnishes nourishment for the first two or three days. Chicks should not be fed until they are from 48 to 60 hours old.

Now, next week at this period, we'll take care of chicks some more. We'll talk about brooder houses.

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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL SECOND RELEASE Wed. April 6/27

SHORT COURSE: Spring Problems in Poultry Management.

LECTURE No.3: Quality of Market Eggs.

ANNOUNCEMENT: Members of the poultry class were asking a number of questions last time about the quality of eggs. Now the Professor is going to take up those questions. He is going to devote the next few minutes to telling his class about the factors which make for quality in eggs. As you know, there's many a bad egg produced on farms.

(The characters speaking during this lecture are: The Professor himself; and Billings and Tate, members of the class.)

* * * * * *

(Four or five raps -- as if on desk)

THE PROFESSOR: You! -- in the back of the room there --- Come up front.

I have a basket of eggs here --- I want to show you -- the things which affect quality ---

I believe some of you were asking about these factors last week. Now, if you will gather around closely -- you can get more out of this. Can you all see this plate on my desk?

BILLINGS: I can, if Godfrey'll move over a little bit -- I can't see through his head -----

THE PROFESSOR: Don't crowd.----- But Billings, suppose you tell us --- What points would you consider in judging an egg?

BILLINGS: What you mean --- the shell, and the air cell?

THE PROFESSOR: Yes. What else?

BILLINGS: The yolk -- the white of the egg --- and -- the germ.

THE PROFESSOR: Good --- Let's consider the shell first -- that has to do with the outside --- and the others with the inside the egg.

Take this egg here, for instance. What would you say about it?

BILLINGS: It's dirty ---

THE PROFESSOR: How's that going to hurt -- the quality of it?

BILLINGS: Germs might get inside -- from that dirt.

THE PROFESSOR: Eggs-actly. The shell of an egg is porous -- and it is quite necessary that it be clean ----- But why shouldn't we just wash it off?

BILLINGS: You might wash off the bloom -- that would expose the pores. That would let the water in the egg evaporate faster -- the egg would spoil quicker.

THE PROFESSOR: Yes. And a washed shell allows the egg to absorb odors -- very readily.

TATE: I'll say it does. Why, Professor, I once put some eggs in an onion crate --- when I went to eat 'em, they tasted like onions.

THE PROFESSOR: The room where you store eggs should be cool -- and free from such objectionable odors ---

Now then, let's consider the air cell ---

As you all know, who have candled any eggs, the air cell is usually at the big end of the egg. It becomes larger as the egg becomes older. In fact, the size of the air cell -- is a good indication -- of the age of the egg-- if the eggs have been kept -- under normal conditions.

TATE: The egg cell gets bigger more quickly in hot weather than in cold, doesn't it?

THE PROFESSOR: That's true, Tate. An egg two days after it's laid - in summer may appear much older -- than an egg seven days old -- laid in October or November. However, in a strictly fresh egg the air cell should be small.

TATE: Just how small?

THE PROFESSOR: Not over three-sixteenths of an inch in depth --- measured from the end -- of the shell -- to the bottom of the air cell. Also, in an egg of the best quality, the air cell occupies a fixed position. It should not be movable.

You all also understand, I take it, that the quality of the yolk -- has a great deal to do with determining -- the relative quality of the egg. That's because changes in the condition of the yolk are faster and more easily seen - than changes in the white around it.

When you test a new-laid egg before your candling apparatus, you should be able to see the yolk only dimly ----

But let's break an egg in this plate -- and get a little inside information. (Sound as of breaking egg may be introduced here)

Ah, that's a good one -- Notice the bright, yellow color of that yolk --

and how well it stands up ---- Let's take another (Sound as of breaking egg) There, another good one -------

TATE: Professor, one of those yolks is darker than the other -- Which is better?

THE PROFESSOR: That's probably due to the difference in feed given the laying hens. Yellow corn, for instance, will produce a much darker colored yolk than white corn. Green feed will also tend to make a dark colored yolk. Certain kinds of feed may also affect the flavor of the egg ----- Let's break another ---- (Sound of breaking egg)

Now then look at that one --- It's a bit stale --- See how the yolk tends to flatten out ---

Notice the white of those eggs, too. You see how the white seems to be really in two parts. This thinner part here on the outside --- which tends to flatten out in the dish. Then this thicker part which stands up well around the yolk. You see that thicker part doesn't stand up so well around this flatter yolk. The degree to which it stands up is a good indication of the age of the egg.

BILLINGS: How about blood spots, Professor? I notice a lot of eggs with blood spots when I candle eggs along this time of the year ---

THE PROFESSOR: Those blood spots don't materially affect the edible quality of the egg --- but they do look bad -- when the egg is cooked for breakfast. Many poultrymen keep those with blood spots in them at home. The eggs are perfectly good for cooking purposes. The blood spots can be easily removed when you open the egg.

But as I called to your attention last time, one of the most important factors affecting quality of an egg is the condition of the germ. The germ or embryo starts to develop at a temperature of about 80 degrees Fahrenheit. In warm weather, especially, farmers are liable to market eggs with partially hatched chickens in them. Such eggs are most objectionable. They cause a reduction in the average price of all eggs marketed -------

TATE: Professor, it may be all right for us to know about what makes for quality in eggs ---- but what we want to know is how we can improve the quality -- so we can get better prices.

THE PROFESSOR: Well, as I told you last time, the simple way to avoid partially hatched chicks in market eggs is to produce infertile eggs --- by just removing the male birds from the laying flock -- immediately after the breeding season.

But there are other things you can do to improve your market eggs. We'll discuss some of them next week.

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UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

U. S. RADIO FARM SCHOOL: FIRST Fri., Apr. 8
PROGRAM RELEASE

SHORT COURSE: Dairy Cattle Diseases.

LECTURE No. 3: Udder Diseases

ANNOUNCEMENT: The Doctor is going to give us another lesson now in dairy cattle troubles. You remember, he's already talked about tuberculosis and last time he told us about milk fever. But you all may have heard that expression "A cow is no better than her udder." And, as you know, there are a lot of things can happen to that particular gland of the cow ---- but that's what the Doctor is going to tell you about.

(The characters speaking during this lecture are: The Doctor himself; and Hudson and Walker, members of the class.)

(Three or four taps -- as if with chalk on blackboard)

THE DOCTOR: Let's have a little order! ----

You'll notice -- here on the blackboard -- I've drawn rough sketches of two cows. On the left, is the cow that was. On the right, is the cow that is the modern dairy cow. That shows you what centuries of careful selective breeding will do.

Notice the milk gland or udder in these two cows. You see, what was a very modest milk gland -- in the original cow -- is now a large, abnormally developed udder.

Before selective breeding began, this organ was capable of supplying only about enough milk for the calf. Now it is marvelously productive.

But functioning as it does now, under high tension, for maximum milk production during most of the adult life of the cow, this wonderful structure is subjected to a very great physical strain. It has little chance for rest or repair. Therefore, it's very susceptible to injury and disease ----------

As you all know, a cow that is healthy in other respects -- but that has -- a diseased or nonproductive udder -- is worthless in the dairy herd --- except possibly as a breeder ---- (As if interrupted) What is it Hudson?

HUDSON: Doctor, what causes that udder disease they call mammitis?

THE DOCTOR: Well, Hudson, mammitis -- or, as it's often called garget or inflammation of the udder -- is due to various causes or combination of causes. Cold or wet weather, bruises, retention of milk, infrequent or irregular milking, the introduction of contaminated instruments into the udder, or local infection may cause it. In fact, any serious disturbance of the cow's health.

HUDSON: How about hardening of the udder?

THE DOCTOR: That's a common result of mammitis. It is caused by structural changes in the udder tissue -----

Now, one of the most serious diseases from the standpoint of the public - is tuberculosis of the udder. You can usually tell it from other udder infections by its gradual onset -- and its chronic course. Also, it rarely causes the cow any pain or inconvenience ----

HUDSON: Doesn't it show in the milk?

THE DOCTOR: Not until it has made considerable progress. Then the milk may get thin, watery, and scanty. It sometimes contains flaky, stingy material as it does in mammitis. Such milk generally contains the germs of tuberculosis. It is dangerous to the health of other livestock as well as to human beings. And there is no known cure for it.

WALKER: Well, how about some of the other diseases. Are there any simple home remedies for any of them?

THE DOCTOR: Certainly, In some of the simpler cases. Just write to the U. S. Department of Agriculture for The Farmers' Bulletin on "Udder Diseases of Dairy Cows". The number of the bulletin is 1422. It may help you to understand the diseases better and to recognize them promptly.

But always remember, the cow's udder is a very delicate and complex organ - besides being of vital imporatnce to your income from dairying. For that reason, you should get the services of a trained veterinarian whenever there's udder trouble. He'll understand the physiology of the organ and the effect of various drugs and treatments -----

WALKER: Is there anything I can do -- to prevent such troubles? I believe in stopping diseases before they get started ---

THE DOCTOR: That's a good rule, Walker. Of course you can't work it in all cases. But there are many udder conditions -- that cause pain and peril to the dairy cow. And many of them can be avoided.

WALKER: For instance? ----

THE DOCTOR: You can adopt this as a general rule --- it will help prevent a number of troubles. Make no sharp departure from your regular, established care of the cow.

As I've pointed out, failure to milk a cow regularly -- invites disturbances of the udder. So does unaccustomed exposure to cold, stormy weather. ---- Well?

HUDSON: Drying off a cow too suddenly will cause trouble, too, won't it Doctor?

THE DOCTOR: It certainly will. It's especially dangerous when the cow is on succulent pasture --- or on a rich concentrated ration.

Before drying the cow off, it's a good idea first to regulate her ration -- by eliminating concentrates.

Also prevent, if possible, sources of injury from barbed wire -- and the bruising or crushing of the teats -- by other cattle stepping on them --

WALKER: How can you stop other cattle stepping on them?

THE DOCTOR: Well, that's often caused by bad stall construction. Build the stalls properly -- and it's much less likely to happen.

Udder troubles are sometimes, directly or indirectly, traceable to farmhands stoning the cows or beating them with sticks, clubs, or whips in driving them to and from pasture. Don't permit any such treatment. It is also advisable to dehorn all cattle which may injure the others. Such injuries may involve the udder, as well as other parts of the body ----

But that's one of the questions we'll have to leave until next week. Next week is the last lesson in this course on diseases of dairy cattle.

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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL SECOND RELEASE Fri., Apr. 8

SHORT COURSE: Dairy Products.

LECTURE No. 3: Cheesemaking.

ANNOUNCEMENT: Last week we were talking about butter-making. Now we are going to take up that other popular farm-made product, cheese. But before the Professor starts, however, I wish to remind you that the United States Department of Agriculture still has some of those free booklets containing 216 printed lessons which have been broadcast by the Farm School this season. You can get these booklets by writing to this station.

(The characters speaking during this lecture are: The Professor himself; and Brunton and Telford, members of the class.)

(Two sharp raps -- as if on desk)

THE PROFESSOR: How many in the class -- know how to make American cheese? -- ----------Just as I expected ---- Not many hands up.

You should always include in your diet cheese. It's good food. --- Some of you don't seem to realize -- Cheese furnishes abundant muscle and body-building material. If you can't get it at the store or your local factory you still can have cheese, especially you men who have plenty of milk.

---Brunton, I noticed you had your hand up. Suppose you tell just how you make your cheese.

BRUNTON: Well, I use fresh, clean whole milk ---- If I'm going to keep it over night --- I cool it right away -- to a temperature of 60 degrees.

THE PROFESSOR: Yes --- milk for cheese must be perfectly sweet --- You should never hold it -- more than 12 hours ----

TELFORD: Professor, how much milk -- does it take -- to make a cheese?

THE PROFESSOR: Well, of course, that varies with the butterfat content -- and with the solids lost in the making. 100 pounds or 11 2/3 gallons of milk with 4 per cent butterfat will make a 10½ pound cheese.

TELFORD: What do you make it in?

THE PROFESSOR: A regular cheese vat is best -----

BRUNTON: Professor, I just make it in a wash-boiler.

THE PROFESSOR: That's all right. But there's one thing you have to have -- that's a good thermometer. To make cheese successfully, you must control the temperature all during the making. ------- All right, Brunton, Go ahead, now, and tell us just how you make cheese ----

BRUNTON: I put the milk in the wash boiler. Then I heat it to 86 degrees F. Then I add the cheese coloring.

THE PROFESSOR: You use commercial cheese color -- sold by dairy supply houses -- of course?

BRUNTON: Yes, sir. I mix in about one half to one teaspoonful to 100 pounds of milk.

THE PROFESSOR: Yes?

BRUNTON: Then I add rennet to make the milk curdle. ---- two teaspoonfuls of rennet for each 100 pounds of milk. I mix the rennet in a pint of cold water and stir it in the milk. I keep the temperature at 86 and just leave things quiet -- for 30 to 35 minutes -- until a firm curd forms. As soon as it's firm enough, I cut the curd into little pieces.

THE PROFESSOR: How do you tell when it's firm enough?

BRUNTON: Oh, I just run my finger in the curd -- at an angle of 45 degrees -- and about a half inch below the surface. Then I raise up the finger a little bit -- and split the curd with my thumb. If the curd splits smoothly -- without leaving any pieces on the finger, it's ready to cut.

They have special curd knives for cutting the curd into cubes less than one-half an inch in size --- but I use a big butcher knife myself.

THE PROFESSOR: What's the next step -- after cutting?

BRUNTON: Well, you stir it gently -- to prevent the pieces sticking together. Then in about 15 or 20 minutes, when considerable of the whey has separated from the curd, you start heating ---

THE PROFESSOR: Slowly --- It's very important to raise the temperature slowly.

BRUNTON: It certainly is -- you should raise it about 2 degrees in 5 minutes until you get it up to 100 degrees. You leave the curd in the whey at 100 degrees until it's firm and acid enough ---

THE PROFESSOR: The amount of acid allowed to develop in the curd -- is very important. Tell us, how you test that?

BRUNTON: By first pressing a little of the curd in your hand -- for about a minute, or until it sticks together and the water is squeezed out. Then you rub the piece of curd on a clean, hot iron until it sticks. Then you pull it away slowly. If in doing that, fine, silk-like threads 1/4 to 1/2 inch long are formed, it's time to dip off the whey -- and put the curd on a rack to drain.

While it's on the draining rack, you have to stir it all the time until all the whey is out. After that, you stir it every 5 or 10 minutes to prevent it matting together --- keeping it warm and as near 100 degrees as possible.

THE PROFESSOR: When do you salt?

BRUNTON: When the curd shows threads from 3/4 to 1 inch long -- with that hot iron test. Three ounces of salt for each 10 pounds of curd is enough. After you stir the salt through the curd, you let the curd cool to 85 degrees before you put it into the press ----

TELFORD: What kind of press do you use?

BRUNTON: Well, you see you first put the curd into a hoop or mold ----

TELFORD: What's that like?

BRUNTON: Oh, you know, just a hoop of galvanized iron sheeting --- with a wooden bottom fitted inside it -- with holes to let out the whey. You line the mold with cheesecloth -- Then put in the curd, place over it a wooden cover that slips inside the hoop, and press it.

TELFORD: With what?

BRUNTON: With a weight pressing down on the curd ---- You can just set the cheese mold on a bench. Then across the top of it, you run a 2 by 4 about 12 feet long, fixed at one end for a lever. Then you can apply pressure to the cheese by putting a weight to the lever near its free end.

I use an old tin bucket full of stones weighing 35 to 40 pounds. All I have to do to increase the pressure -- is to shove the bucket further out toward the end of the lever.

THE PROFESSOR: That's a good arrangement, Brunton, where did you learn so much about making cheese?

BRUNTON: I've made cheese at home lots of times - besides you can get it from a free bulletin -- issued by the United States Department of Agriculture. It's called "Making American Cheese on the Farm". The number to ask for, is Farmers' Bulletin 1-1-9-1 --

THE PROFESSOR: Good. I hope the class heard that. Farmers' Bulletin Eleven Ninety-one. It will give you a number of details, Brunton hasn't touched on.

The making and pressing is just half the process. The other half if the curing. That can be done in six weeks or it may be more slowly cured and kept for many months.

That bulletin will tell you about the different methods of curing.

The curing room, you probably know, should be kept between 65 and 70 degrees. You can make cheese through the summer, and keep it until winter, especially in the Northern states. When the cheese is to be kept so long, however, you should cure it at the lowest temperature you can get on the farm. As the weather becomes cooler in the fall, you should keep the cheese at a temperature as near freezing as possible. But do not let it freeze ----- (As if interrupted) What it it, Telford?

TELFORD: How about making cottage cheese, Professor?

THE PROFESSOR: That's another -- and simpler - proposition. But we will discuss that next week.

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UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

PROGRAM..... RELEASE.....

U. S. RADIO FARM SCHOOL: FIRST: Mon. Apr. 11/27.

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(NOT FOR PUBLICATION)

SHORT COURSE: Livestock Equipment.

LECTURE No.4: Miscellaneous Devices.

ANNOUNCEMENT: The course on livestock equipment -- given by the Radio Farm School -- of the United States Department of Agriculture -- will be concluded this evening. The lessons previously broadcast -- may be secured -- in printed form -- by writing to this station. There are 216 of these Farm School lessons in booklets -- for which there is no charge. Send in your name -- while you are thinking about it. All right, the Professor is now ready -- to open the last class in this course.

(The characters speaking during this lecture are: The Professor himself: and McAlister and Boyd, members of the class.)

* * * * * * *

(Three or four raps --- as if on desk)

THE PROFESSOR: Order in the class room! ---

We've been talking -- livestock equipment -- for some time now. This is our last chance to discuss the subject -- for quite a while. Have any of you any questions? -- Any equipment -- you wish to know about?

(As if interrupted) Well, McAlister? --

McAlister: Not long ago, I shipped a ram in a crate.--He got hurt.

THE PROFESSOR: You're not the only one -- Stockmen of this country lose thousands of dollars each year -- because they use poor crates.

McALISTER: Well, what makes a good crate, Professor?

THE PROFESSOR: The lower slats should be nailed close together; so the animal won't poke his foot or leg out where it doesn't belong --- and get it broken.

----- It shouldn't be so short -- that part, or all, of the animal's head is outside the crate. There's big danger of damage -- when the crate's too short.

An investigation of the shipping crate problem shows --- that some crates have too much lumber in them. Others have too little.--- They're not substantial enough for the job. Others lack bracing or have weak corners.

In some cases, too few nails are used. In others, the nails are too small

to hold -- or so large that they split the wood. Sometimes they're driven into the end grain and, of course, have little holding power.

McALISTER: What kind of wood is best for crates?

THE PROFESSOR: White pine, aspen, basswood, cottonwood, cypress, chestnut, and others of that class are suitable. You can use the harder woods -- but they are harder to nail -- and they're heavier. Material for crate building is usually an inch thick by four inches wide. Lay the floor cross-wise on 2-by-2-inch skids ----except for grown cattle ---- They'll take 2 by 4 skids.

McALISTER: How big would you build the crate ----- say, for the average size sheep?

THE PROFESSOR: 4 feet long; 1 foot 9 inches wide; and 2 feet 10 inches high. Inside dimensions, of course. Such a crate will weigh about 75 pounds.

BOYD: What would be the right size for hogs -- from 125 to 225 pounds?

THE PROFESSOR: 4 feet 4 inches long; a foot and a half wide, and 2 feet 9 inches high. It would weigh about 80 pounds.

Now, inside dimensions of a crate for the average cow should be 8 feet 6 inches long, 3 feet 2 inches wide, and 5 feet 1 inch high.

Whenever you get hold of a good crate -- clean it, store it somewhere off the ground, and cover it. It will last for years that way -- and you'll have one when you need it. -----Are there any other questions?

BOYD: Yes, sir, Professor. How do you do this hog tattooing. Is it practical?

THE PROFESSOR: Yes, especially in disease-control work and for cooperative marketing associations. By tattooing, the origin of the animals can be traced after they are slaughtered. That's important where shipments are made up of a number of small lots. Then when disease shows up in the carcass, it can be traced to its source.

BOYD: How do you tattoo 'em.

THE PROFESSOR: Why, just with one stroke of the tattoo instrument -- as the hog walks by. It's simple and easy.

BOYD: Just what's that instrument like?

THE PROFESSOR: It's made up of metal blocks -- in which tattooing points are set to form numbers and letters. The blocks are about an inch square, and can be used in different combinations. They fit in a convenient holder. Ordinary black enamel is one of the successful tattooing pigments used.

BOYD: Do the marks show up plainly?

THE PROFESSOR: On the dressed carcass they do. But not on the living hog ---

BOYD: What would you use -- for keeping track of hogs while they're alive? Ear tags?

THE PROFESSOR: Well, ear tags are likely to be lost or torn out -- if the hogs root or fight much. Notches in the ear -- with small, sharp, side-cutting pliers are most common.

McALISTER: Metal ear tags are all right for cattle and sheep -- aren't they?

THE PROFESSOR: If they are gentle enough -- so you can catch them easily to read the tags. Put the tags fairly close to the head --- where they'll be least likely to be torn out.

Marking sheep with paint brands on the wool helps detect the sheep which enter the wrong flock. But you should use regular branding paint that will scour out of the wool after it's clipped.

Marking animals for identification is important. Suitable markings are not only useful in establishing ownership, but in keeping breeding records -- and tracing diseases.

In branding cattle with hot irons, you should have the iron hot enough to stamp the brand without delay. Apply linseed oil after you stamp the brand on. It tends to soften the scorched area -- and to prevent the formation of callous places -- such as you often see where the iron is too hot. You can get detailed information about marking livestock from the United States Department of Agriculture.

McALISTER: Have they got anything on dehorning equipment?

THE PROFESSOR: Oh, yes. But speaking of dehorning, a simple way to prevent horn growth is to rub slightly moistened caustic soda or potash 3 or 4 times alternately on the undeveloped horns when the calves are 4 to 10 days old. Allow the caustic to dry each time before applying to the next. You can get the caustic at any drug store. It comes in sticks about the size of a lead pencil.

Of course, if it's not practical to nip them in the bud that way, you'll have to cut the horns off.

McALISTER: Which is best to use, clippers or a saw.

THE PROFESSOR: Clippers give the best results with young cattle. But you should use the saw for the older animals. From one-eighth to one-half inch of skin should be taken off with the horn -- to prevent it growing out again.

In case you have to dehorn in warm weather, when there is danger of the wound becoming infested with screw worms, you should put some pine or coal tar on the wound immediately after the animal is dehorned -- to repel the flies ------ All right. Any other questions. If not, we will now close this series of talks on livestock equipment.

We hope to see you all in the same seats next season.

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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM..... RELEASE.....

U. S. RADIO FARM SCHOOL: SECOND Mon.,Apr. 11.

(NOT FOR PUBLICATION)

SHORT COURSE: Work Horses and Mules.

LECTURE No.4: Saddle Horses

ANNOUNCEMENT: The United States Department of Agriculture -- will now present -- the last of its series of -- four lessons on work horses and mules. If you've missed out on any of these lessons previously broadcast by the Department's Radio Farm School -- drop a line to this station and ask for the printed booklets -- being distributed -- free of charge. This evening the lesson is to be about -- how to tell a sound horse -- and how to train a saddle horse ------

(The characters speaking during this lecture are: The Professor himself; and Drake and Richards, members of the class.)

* * * * * * *

(Sound -- as of horse trotting on track)

THE PROFESSOR: Line up along the fence here --- where you can all see.

I brought this class out here -- because I wanted you to see -- some sound horses -- and a real trainer.

Bob Barnes there is what you call a real horseman --- He's got the kind, quiet, even-tempered disposition that a good trainer needs. He has regular habits -- he loves horses --- and he's a close observer.

You know, it takes close observation in horsemanship. Horses are individuals You have to know them individually -- to feed and care for them properly --- to know how much they can do in a day --- and to detect signs of overwork, overheating, and disorders of all kinds ----

DRAKE: That saddle horse, he's riding there, certainly looks well cared for ----

THE PROFESSOR: Yes -- Notice how lustrous and rich its coat is --- That horse is healthy --- It has a good temperament, too.

RICHARDS: How can you tell about his temperament, Professor?

THE PROFESSOR: That's shown in his eyes,-the width between his ears -- and the way he carries himself. That horse that has a good temperament - He has big, mild, bright eyes. His head's wide between the ears. He obeys commands readily, and just notice that alert, graceful carriage he has when he's moving -----

DRAKE: Professor, what would you say, are the things -- to bear in mind -- in selecting a serviceable horse?

THE PROFESSOR: Well, Drake, I'd say temperament, conformation, action, soundness, age and education are things to look for. Keep in mind the job for which you want the horse -- and then make a careful systematic examination to minimize the chances -- of overlooking any of the important points. In examining a horse, make a thorough survey --- from the front, sides, and rear. And remember, examine him first to determine whether he is built on the lines suitable for the work to which he is to be put.

The common faults of conformation are narrow chests, straight, short shoulders, shallow bodies, long, weak couplings and loins, poorly developed muscles in hindquarters, and weak, improperly formed legs and bad feet.

Now the common unsoundnesses are bone spavin, extreme fistula, extreme atrophy of the muscles, roaring, heaves, ringbone, curb, splints, and sidebones.

But it is well not to form the habit of seeing only defects. Horses, like people, are seldom perfect. Weigh the good qualities against the bad. You should value a horse by the service it will perform --- rather than by minor shortcomings.

RICHARDS: What's the best age for a horse?

THE PROFESSOR: About 7 years, Richards. He begins to decline in value when he's eight. But, with good care, he may give useful service --- until he's over 20.

Of course, it takes experience to tell the age of a horse by his teeth -- and to determine many unsoundnesses -- and detect some of the faults.

(Sound as of horse trotting)

DRAKE: Here comes Barnes on his saddle-horse again ----

THE PROFESSOR: You notice that trot is brisk -- but it's steady and true ---

RICHARDS: Did you notice how Barnes touched him on the crest with his right hand when he started him to trot?

THE PROFESSOR: Yes, that's the signal for a trot. A horse soon learns the association --- and starts to trot when he get's the signal.

DRAKE: I guess he's going to change into a canter now ----

THE PROFESSOR: I guess not. Bob will start him to canter from a standing position or from a walk. You should never let a colt trot into a canter after he's learned the canter signal, which will be a touch with the heels or spurs -----

DRAKE: How would you teach a colt to canter?

THE PROFESSOR: Well to start the canter, you'd collect the reins --- so you can get plenty of pull -- if necessary. That's where the double-rein bridle comes in

handy. You can use the curb lightly at first --- and more severely if the colt tries to go faster.

Then you use both heels in his flanks --- to start him into a gallop. You give him his head just long enough to let him start to run --- then you pull him into a slow gallop. Gradually, in succeeding rides, you get him to canter slowly. But you should never let him drop into a trot. Canter short distances at first and stop entirely or go into a walk from the canter.

RICHARDS: It's a good idea to start the canter at a certain point in the road each time, isn't it?

THE PROFESSOR: Yes. And remember, please, a trainer must be patient. Be careful with the curb bit -- but use it with the snaffle bit. It not only gives better control -- it develops a good mouth and a pleasing arch in the neck.

If you will canter both ways in a small circle --- you will make it easy to teach the horse later to lead with either fore foot.

These things do not take much time --- but they do require patience --- and judgment. Manners mean much in a saddle horse.

DRAKE: How old should the horse be -- for training to ride?

THE PROFESSOR: Between 3 and 4 years old. It's best to have him first well broken to drive in single and double harness.

DRAKE: How would you get him used to the saddle?

THE PROFESSOR: After he had become used to the bit, I'd put the saddle on him while he was in the stable -- and I'd be sure he was well tired before I tried it. I'd let him wear the saddle in the stable for an hour or so each day -- for several days -- before I tried to mount him. I'd lead him around with the saddle on. And I'd be very careful not to frighten him. A young horse is easily spoiled at this stage of his training.

If the ceiling was high in my stable, I'd get on him while he was tied in the stall. I'd teach him to stand quietly while being mounted. I wouldn't ride him far while he's young. I'd try to get him to walk fast ------ but let's go over here and see Barnes --- maybe we can get some hints from watching him.

I've got to trot along myself soon. This is our last regular class in the Livestock School until next fall. I hope to see you all at school again then.

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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL. FIRST RELEASE Apr. 13.(Wed.)

1.9
M3FS

(NOT FOR PUBLICATION)

SHORT COURSE: Brooding and Rearing Poultry.

LESSON No.4: Brooder Houses.

ANNOUNCEMENT: The United States Poultry Farm School will now continue its course on brooding and rearing chickens with a lesson on brooder houses. Before the class begins, however, let me call your attention again to those 216 printed lessons which the Department of Agriculture is sending out to those who request them. If you have not yet received yours, just send your request in to this station. Now then, I hear the school bell ringing.

(The characters speaking during this lecture are: The Professor himself; and Russell and Brandt, members of the class.)

* * * * * * *

(Three or four raps -- as if on desk)

THE PROFESSOR: Russell! ----

RUSSELL: Yes, sir.

THE PROFESSOR: You are raising chickens for profit? -----

RUSSELL: Sure -------

THE PROFESSOR: Did you realize that your success in brooding -- may have a deciding effect on your profits?

RUSSELL: I guess that's right --------

THE PROFESSOR: Then, of course, the houses in which you brood the chickens should be such -- as to promote efficient growth in the chicks ------

RUSSELL: Certainly! --

THE PROFESSOR: Are your brooder houses that kind?

RUSSELL: I guess so.

THE PROFESSOR: Don't you know? --

RUSSELL: Well, they provide plenty of protection from the weather. They're well ventilated,

THE PROFESSOR: Good. The houses should not be stuffy. At the same time, there should never be a draft passing through the house. The main object is to have them as comfortable for the chicks as possible --- on all occasions.----- Where do you place the brooder stove? ---

RUSSELL: In the back part of the house.

THE PROFESSOR: Why do you do that?

RUSSELL: So the front of the house will be cooler -----

THE PROFESSOR: Yes. Or, better still, you can divide the house into two sections. One for the stove --- and another for exercising and feeding. With an arrangement such as that, the chicks can get away from the heated section to scratch in the cool section. That tends to keep the chicks growing -- and in the best of health. Single-room brooder houses are often kept too warm.-----(As if interrupted) Well, Brandt? ---

BRANDT: You wouldn't let the chicks in the cool section -- when they're first put in the brooder. Would you, Professor?

THE PROFESSOR: No. When they're first put in, I'd confine them under or close around the hover --- by placing a board or a wire-frame guard a few inches outside.

Then, I'd move the fence or guard farther and farther away from the hover. When the chicks learn to go back to the heat --- when they're three or four days old -- I'd take away the fence entirely ---

BRANDT: Some times they pile up in the corners ----

THE PROFESSOR: Yes. Many chicks are smothered that way.

BRANDT: How would you keep them from doing it?

THE PROFESSOR: I'd do away with the corners.-------

BRANDT: How can you do that?

THE PROFESSOR: Why, just put boards or wire netting across the corners.

BRANDT: Well, how about the floor? would you cover that with anything?

THE PROFESSOR: Oh, yes. It should be covered with about 1 inch of cut clover, alfalfa, or straw.

BRANDT: How about using sand?

THE PROFESSOR: Sand makes a good covering. But, in case you use it, you must be very careful to feed the chicks properly. If they're not fed as they should be, they're likely to eat sand --- It may cause losses.

Whatever kind of litter you use, take it out often. Always bear in mind

that cleanliness is essential in raising chicks successfully. That, of course, applies to the outside as well as the inside of the house. They should have clean ground to run on whenever the weather is favorable.

And when you first let them out, teach them not to stray far. You can do that the same way you taught them to return to the stove. Confine them with a wire fence. Then, after a few days, enlarge the enclosure. Then, in a few more days, take the fence away altogether -----

Be sure the chicks can get in and out the doorway easily. Put a good mound of clean earth at the doorway -- to make it easy for them to go in and out.

RUSSELL: Professor, what would you do -- in case you didn't have new ground for them to run on? That is, in case the yard was infested with coccidiosis or parasitic worms? ------

THE PROFESSOR: Well, I'd either keep them in the brooder house for the first two or three weeks -- or keep them on concrete yards. But we'll take up that question of yards in the class next week. We don't want to get too far ahead.

We're concerned with the brooder right now. And I particularly want to emphasize the importance of the first days in the brooder. In fact, you can hardly be too careful in moving the chicks from the incubator to the brooder. Many chicks are killed as a result of the chilling they get -- while they're being taken to the brooder.

In cool or cold weather, you should move them in a covered basket. Have the temperature under the hover at about 95 degrees ------- (As if interrupted) What is it, Russell?

RUSSELL: How soon after hatching would you move them?

THE PROFESSOR: Well, they're usually left in the incubator from 25 to 36 hours after hatching. But the brooder should be in operation, at the proper temperature for receiving chicks, for 3 or 4 days before you put them in it.

You should watch the chicks closely after you first put them in the brooder -- to see that they do not huddle or get chilled ------- Well?

BRANDT: How can you stop the chicks toe-pecking?

THE PROFESSOR: If they start it, take out the wounded ones and paint their toes with tar. Getting the chicks outdoors will serve to check the habit.----

But we'll discuss the outdoor arrangements for caring for chicks next time.

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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM..... RELEASE.....

U. S. RADIO FARM SCHOOL. First Fri. Apr.1

1.9
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SHORT COURSE: Diseases of Dairy Cattle.

LECTURE No. 4: Calf Diseases

ANNOUNCEMENT: The United States Radio Dairy Farm School will now present the fourth and last of its series of lessons on the diseases of dairy cattle. Lessons previous broadcast can be obtained in printed form without charge -- by applying for them through this station. The class room is now full --- The Doctor is ready to begin ---

(The characters speaking during this lecture are The Doctor himself; and Reynolds and Jones, members of the class.)

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(Two sharp raps -- as if on desk)

THE DOCTOR: Let's have order!

This is our last class. Have any of you any questions -- you'd like answered? Perhaps that's the best way to get at what would be most valuable to you -------(As if interrupted) Well, Jones?

JONES: Tell us something about calf diseases, Doctor.

THE DOCTOR: Well, many calf troubles are caused by bad feeding -- or insanitary conditions --- or both. Like other young animals, calves need proper feed and special attention until they have developed vigor enough to stand adverse conditions.

You should keep your calves out of cold rains and undue exposure in storms -- especially during cold weather. They should have plenty of exercise, sunshine, pure air, fresh water, and a variety of wholesome feeds. If they get those things they won't need much medical attention. Keep salt before them constantly. Keep the pens and yards clean. Provide them a comfortable place to sleep ----

Now then, Jones, is there any particular trouble you had in mind?

JONES: Yes, sir. What's the best thing to do in cases of calf scours,

THE DOCTOR: As soon as you discover scours, put the calves in individual pens. Prevent their contact with one another. Calf scours often produces serious results. It commonly affects calves that are from a few hours to two weeks old. It may end fatally in from 24 to 48 hours.

See that thepens you put the calves in have plenty of sunlight, and are kept clean --- and with plenty of dry bedding.

Newborn calves that are being artificially fed should have 8 to 12 pounds of their dam's milk each day in three feedings -- morning, noon, and night. Add a pint of lime water to each feeding and feed the mixture at a temperature of 100 degrees F. Where calf scours prevail, it's a good precautionary measure to give calves two or three ounces of olive oil or mineral oil shortly after birth.

JONES: What causes scours, Doctor?

THE DOCTOR: It may be indirectly due to a number of things. Irregular feeding, overfeeding, sudden change of feed, feed not warmed to the proper temperature, use of dirty milk pails or feed boxes, or damp, dirty stables may bring it on. -----Well, Reynolds?

REYNOLDS: Doctor, they tell me that calves can catch tuberculosis by nursing or drinking milk from diseased cows. What's the best way to prevent that?

THE DOCTOR: Where there is any doubt about the freedom of cows from tuberculosis, you should pasteurize the milk. Or, simpler than that, you should just boil the milk for a few minutes -- when it's intended for calves.

With proper attention to clean, wholesome feed and sanitary surroundings calves should stay in good health. In case disease does appear - especially when the calves have something you don't understand fully, the safest course is to consult a competent veterinarian. The proper use of drugs, the tuberculin test, or surgical treatment all require professional training.

However, it's well to know about calf diseases. I'd advise you towrite to the United States Department of Agriculture for the Farmers' Bulletin on Feeding and Management of Dairy Calves and Young Dairy Stock. The number of the bulletin is 1-3-3-6 and it will be sent to you free, if you ask for it.

Are there any other questions?

JONES: What's the cause of foul foot?

THE DOCTOR: It's thought to be most frequently due to the animal becoming infected from stable filth, while standing in wet, dirty places --- or from foreign matter becoming wedged between the toes.

JONES: What's a good treatment for it?

THE DOCTOR: Well, the foot should be thoroughly cleaned. If it's only slightly inflamed, you wash it in a solution of carbolic acid.

JONES: What strength solution?

THE DOCTOR: 1 part of pure acid to 20 parts of water. Undiluted creosol compound is also good. You should keep the animal in a clean,dry place.

In persistent or aggravated cases, the foot should be washed well with the solution. Then a wad of absorbent cotton smeared with pine tar should be placed in the cleft. You can hold it in place with a strip of strong cloth 2 inches wide. Pass the cloth between the toes. Wind the ends above the hoof and tie them. The corner of a grain sack, with strips left attached for tying, makes a good outside bandage.

REYNOLDS: Doctor, how about bloat? What kind of feed causes it?

THE DOCTOR: Any kind which produces indigestion -- and forms gas in the paunch. Young clover or alfalfa; spoiled silage and roots; and pasture, especially if covered with dew, may cause bloat.

The paunch is inflated most noticeably on the left side. In severe cases, this distention may extend above the back. When tapped with the fingers, the paunch gives a drum like sound. When the bloat is pronounced, the animal has difficulty in breathing.

REYNOLDS: What do you do in a case like that?

THE DOCTOR: Walk the animal. If that doesn't help, give it a drench composed of two tablespoonfulls cresol compound mixed with two quarts of warm water. After the bloating has subsided, give a drench of 1 pound of Epsom salt in 3 pints of warm water. If these remedies are not effective, it may be necessary to puncture the paunch -- but, of course, that should be done by a competent veterinarian.

There are a number of other cow troubles, we might mention, but you will find them treated briefly in the bulletin on the Care and Management of Dairy Cows.

REYNOLDS: Is that one of those United States Department of Agriculture bulletins?

THE DOCTOR: Yes. It's Farmers' Bulletin 1-4-7-0. The Department will send it to you free of charge. It's a handy thing to have on hand.

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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

U. S. RADIO FARM SCHOOL: SECOND Fri. Apr.15.

PROGRAM..... RELEASE.....

NOT FOR PUBLICATION

1.9
A3F6

SHORT COURSE: Dairy Products.

LECTURE No. 4: Making Cottage Cheese on the Farm.

ANNOUNCEMENT: The Radio Dairy Farm School of the United States Department of Agriculture is going to close its course on dairy products this evening with a lesson on making cottage cheese on the farm. As this is the last of the regular dairy courses this spring, I want to call your attention once more to the fact that you can secure the 216 lessons of the Radio Farm School in booklet form. These printed lessons are free for the asking. They may be had by applying for them through this station.

(The characters speaking during this lecture are: The Professor himself; and Caffrey and Lewis, members of the class.)

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(Sound -- as of placing jar on desk)

THE PROFESSOR: Just a moment, please, until I get the top off this jar.

I wish to show this class some real cottage cheese -----

Lewis --- Do you like cottage cheese?

LEWIS: Yes, sir. I eat it.

THE PROFESSOR: Try some of this, then. (Pause)

LEWIS: Um-m-m. That is good -----

THE PROFESSOR: You notice that smooth, soft texture! It's free from lumps and uniform throughout. It has that clean, mild, acid flavor too, hasn't it? That's what I call good quality cottage cheese!

CAFFREY: How do you get that flavor? And that texture?

THE PROFESSOR: Well, Caffrey, the flavor can be controlled by the use of clean, sweet skim milk and a good starter. The texture largely depends on careful manipulation during the making process.

LEWIS: This would taste better, Professor, if you had a little sweet or sour cream to go with it -----

THE PROFESSOR: I made this several days ago. Stored in an earthenware or glass jar as this is, you know, it's good for several days. It'll keep longer when it's stored in a cool place.

Ordinarily, I eat it when it's freshly made. But I thought I'd bring this down to show you all. Some of you apparently don't realize that cottage cheese furnishes a convenient and economical way of using skim milk for human food. It's easily made. It requires no special equipment. And it is a highly palatable and nutritious product.

CAFFREY: Do you pasteurize the milk to make it?

THE PROFESSOR: Well, it's desirable to do it. But it's not always practical. Pasteurization makes it possible to control the fermentation. It also increases the yield. It renders the product free from disease-producing organisms. Of course, if you pasteurize the milk just before you use it, it is absolutely necessary to use a starter.

CAFFREY: What do you use for a starter.

THE PROFESSOR: Well, a homemade starter can be obtained by allowing desirable acid-forming bacteria to grow in a quantity of milk -- until the milk contains a great number of bacteria --- which cause the milk to become sour.

CAFFREY: You mean you use good sour milk for a starter?

THE PROFESSOR: Yes. That's right.

CAFFREY: How much would you use?

THE PROFESSOR: About a cupfull is enough. But more or less than that may be used.

LEWIS: Professor, tell us just how you make cottage cheese -- will you?

THE PROFESSOR: Well, first you take milk -- milk which is clean and has been well cared for. You put it in a pail or shotgun can and warm it to 75 degrees. You let it stand at that temperature until it curdles. You should always use a thermometer, if you expect to get uniform results --- (As if interrupted) Well, Caffrey?

CAFFREY: How much cottage cheese will a gallon of milk make?

THE PROFESSOR: About a pound and a half. ----

Now then, an essential step in the making of cottage cheese is to sour or ripen the milk. If you take care in the production and handling of the milk, you can make a good grade of cheese by allowing the milk to sour naturally. However, you can get more definite and uniform results by the use of a starter -----

LEWIS: Why is that, Professor?

THE PROFESSOR: Starters aid and hasten acid fermentations. And they tend to suppress the undesirable fermentations.

CAFFREY: How long does it take to curdle the milk?

THE PROFESSOR: Well, of course, it depends on the freshness of the milk --- Do you mean how long it takes with or without a starter?

CAFFREY: Either way ---

THE PROFESSOR: With a starter the skim milk will curdle in 10 or 15 hours. Without a starter, fresh milk may not curdle for 24 hours or even longer. Increasing the quantity of the starter will reduce the time required.

CAFFREY: How can you tell when it's ready?

THE PROFESSOR: It's ready for cutting when a smooth, firm curd has been formed. But making it, is not as hard as it sounds. During the settling period, it doesn't need any special attention.

When the curd is ready to cut, you cut it corsswise into one or two inch squares with a long-bladed knife. Then you heat the mixture or whey and curd particles to about 100 degrees. You stir the mass at intervals for about half an hour.

The stirring and heating gradually reduce the size of the curd particles until they are a little smaller than peas. Then the curd is ready to drain. The degree of heating, the size of the curd particles, and the acidity developed largely determine the texture of the cheese.

After the heating, you pour the curd in a cheese cloth and allow it to drain into a pail. Don't disturb it for 15 to 20 minutes --- or it may become mushy --- and the whey will be harder to get out.

After this preliminary draining, you should raise and lower the sides of the cloth to drive out the whey a little faster. Keep that up until very little whey separates, until it is ready for salting.

After the salt is sprinkled on the curd and worked in with a spoon or paddle, the cheese is ready to eat ----

CAFFREY: How much salt do you use?

THE PROFESSOR: Salt it to the taste. Ordinarily, it takes about a teaspoonful of salt for each pound of curd.

LEWIS: Professor, isn't it easier to make cottage cheese with rennet?

THE PROFESSOR: Yes. Rennet or junket tablets also give it more uniform texture. You make it just like I told you, except you dilute 2 or 3 drops of liquid rennet in a tablespoonful of cold water and stir it in the milk. If you can't get the rennet, one-eighth of a junket tablet to a gallon of milk may be used.

After the milk is curdled from the use of either rennet or junket, you pour it directly on the drain cloth---- without cutting or heating. Because of the fineness of the curd, you'll need a finer and heavier draining cloth. After a short preliminary draining, you draw the ends of the cloth together, tie them and put enough pressure on to bring the curd to the right consistency.

CAFFREY: Professor, you use cottage cheese with other dishes don't you? Have you got any good recipes, I can take home to the Missus?

THE PROFESSOR: Well, Caffrey, you can get those from the United States Department of Agriculture -- with full details on how to make the cheese. Just write for Farmers' Bulletin on "Making and Using Cottage Cheese in the Home." It's number 1-4-5-1. You can get it free.

As this is the last class in this Dairy Farm School for the present, I will now wish you a very prosperous summer.

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL FIRST RELEASE Wed., Apr. 20.

SHORT COURSE: Brooding and Rearing Chickens

LECTURE No. 5: Yards for Chicks.

ANNOUNCEMENT: This evening we have the fifth of the series of lessons on brooding and rearing chickens. These lessons are prepared by the United States Department of Agriculture and areissued through its Radio Service. You will recall, the lesson last week was about brooder houses. Now the Professor is going to discuss yards for chicks. He has something to say to you who haveplenty of available land -- and to you who have but little yard space.

(The characters speaking during this lecture are: The Professor himself; and Trent and Perkins, members of the class.)

PERKINS: Professor!

THE PROFESSOR: What is it, Perkins?

PERKINS: Last class, you told us -- that when we first -- let chicks out of the brooder houses -- to keep them fenced up awhile ----

THE PROFESSOR: Yes. For a week or ten days -- until they learn to go back - to their own brooder house.

PERKINS: How big would you make those yards?

THE PROFESSOR: Oh, about 12 feet long. After they learn their own houses, you can take the fence away -----

PERKINS: Would you put up the fence again -- in case you moved the chicks to a new house -- or moved the house to a new site?

THE PROFESSOR: Why, certainly, Perkins. They should be confined for a few days -- until they get used to their surroundings.

PERKINS: Isn't there danger of hawks -- killing the little chickens?

THE PROFESSOR: Well, of course, if the hawks or crows or cats or dogs cause trouble, you may have to use covered yards. It may be necessary to keep the brooder houses quite close together --- and confine the chicks to a very small space until they are 6 or 8 weeks old.

TRENT: Professor, can't you raise fairly good market chicks indoors. That is, if you give them cod-liver oil in their feed?--- and some direct sunlight?

THE PROFESSOR: Well, Trent, it's true -- you can do that. But I want to emphasize, and I cannot over emphasize, the value of plenty of sunlight, out-door range, green feed, and exercise.

The ideal condition for raising chickens is on open range -- without yards. Fences greatly increase the labor cost -- as well as the cost of equipment and maintenance ----

TRENT: But, Professor, open range is not practical ----

THE PROFESSOR: Under most conditions it's not.

PERKINS: Well, what would you say, is the best way to raise chickens?

THE PROFESSOR: It's best to raise them in one large yard or field. A field fenced to keep the chickens in -- and the dogs and rodents out.

You can brood the chickens in colony brooder houses --- in flocks of about 350 chickens to each house.

PERKINS: How far apart would you place the houses?

THE PROFESSOR: About 125 feet apart each way. At that distance, the chickens won't mix much -- and you can keep the land fresh, and in good condition. You should keep it in grass sward.

PERKINS: How long can you use the same field that way?

THE PROFESSOR: Four or five years -- if you move the houses each year --- and sow the bare spot in front of each house to grass seed -- in the fall or early in the spring.

Take the chickens away from the range as soon as possible in the late summer or early fall. Keep the land free from poultry until the next spring.

If the soil becomes infested with worms -- or with disease germs ---- or if you can't keep the land in good grass, you may have to move the chickens to fresh land more often.

The value of clean land in growing good chicks can not be over estimated. In many cases, poultrymen get good results the first year or two. Then, each succeeding year, they fail to do as well --- due to contaminated yards ---- (As if interrupted) Well, Trent?

TRENT: Suppose you haven't got that much room! Suppose you can't keep the land in grass?

THE PROFESSOR: Well, in case you have only limited range -- divide it up into two yards. Sow one yard to quick-growing grain crop. Use the other for chickens. As soon as the grain is 2 or 3 inches high, change the chickens to the green yard. Then sow the other yard to grain. During the spring and early summer, such grains as wheat, oats, rye or barley and a small amount of rape seed are used.

If you have very small flocks, such as some people keep in back yards, you can keep the coops on the lawn or on parts of the garden --- and move them every few days ------

PERKINS: How about raising broilers in long brooder houses? Where you have yards anywhere from 15 to 50 feet long?

THE PROFESSOR: It's very hard to keep the soil fresh and clean in such yards. That's why some poultrymen are using small concrete yards around the brooder house.

If dirt yards are used, you should turn over the soil often --- or replace it with new soil. Make every effort to keep the land fresh. Lime will help.

TRENT: Professor, how high would you build the yard fences?

THE PROFESSOR: From $5\frac{1}{2}$ to 7 feet high. Leghorns and the lighter breeds, of course, need the higher fences. In fact, you may have to clip the flight feathers on one of the wings of some of them.

TRENT: What makes the best fencing?

THE PROFESSOR: Well, either ordinary poultry woven-wire fencing or two-inch mesh hexagonal netting is used for big yards or fields. In small yards for baby chicks, you have to have a strip of one-inch mesh wire, one foot high, around the bottom of the fence.

In a chicken yard, remember, you need shade. Trees and low shrubbery provide the best shade. But, if there's no natural shade available, make

artificial shelters of branches or burlap ---

PERKINS: A corn field provides good shade for chicks, doesn't it, Professor?

THE PROFESSOR: Excellent, Perkins. It also makes a good range -- except it lacks green feed.

With a big chicken range like you have, Perkins, you could save work by having water piped over the range. You can have it installed so you can shut it off during freezing weather -- when you have no chickens on the range, anyway.

Chicks should have plenty of clean water. It makes for health -- there are a number of other things ----- but we'll take up that subject of raising healthy chicks next week.

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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL SECOND RELEASE Wed. Apr. 20.

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NOT FOR PUBLICATION

SHORT COURSE: Spring Problems in Poultry Management.

LECTURE No. 5: Preserving Eggs.

ANNOUNCEMENT: The second lesson of the United States Radio Poultry School this evening will be about preserving eggs for home use. Before the Professor opens his class, however, let me call your attention to the fact that you can get the 216 printed lessons on poultry and other farm subjects, which we have previously broadcast, by applying for them through this station. These lessons are prepared in booklet form by the United States Department of Agriculture and will be sent to you free of charge.

(The characters speaking during this lecture are: The Professor himself; and McAlister and Trent, members of the class.)

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(Four or five raps -- as if on desk)

THE PROFESSOR: Order, please!

Some members of the class have asked me to say something about how to preserve eggs.

To practical people like you are, it is not necessary to point out the advantages.

You can put up eggs now in the spring, when they are about 30 cents a dozen, and use them next fall and winter, when fresh eggs bring from 60 to 90 cents. ----

McALISTER: But they won't be as good as fresh eggs! ----

THE PROFESSOR: No. Of course, preserved eggs, or those which have been kept in cold storage, lack some of the quality of fresh eggs. They should never be offered for sale for fresh eggs.

But in the winter, fresh eggs are scarce. They are high in price. Under such conditions, it's good practical economy to preserve eggs for home use -- while they are cheap and plentiful --- (As if interrupted)

What is it, Trent?

TRENT: Did you say to preserve them at this time of the year?

THE PROFESSOR: Yes. Eggs laid during the spring are best for preserving -- but, just a moment, Trent. Suppose you tell the class, just what sort of eggs you would select for preserving.

TRENT: Well, I'd select eggs from hens that didn't have any roosters running with them.

THE PROFESSOR: Yes. Infertile eggs keep longer than fertile eggs. It's always best to have infertile eggs for preserving ----

TRENT: I'd use only strictly fresh eggs ----

THE PROFESSOR: Certainly. Not only will they keep much better; but if you put an egg which has started to decay in a jar with fresh ones, it is likely to affect all the eggs around it.

What other requirement would you have for preserving eggs?

TRENT: They'd have to be perfectly clean, too ---

THE PROFESSOR: That's important -- If you put them in the preserving medium when they're dirty, they will spoil. If there's any kind of filth adhering to the shell, it will taint the preserving medium and so taint the other eggs ----- Under no circumstances should badly soiled or cracked eggs be used for preserving -----

McALISTER: Couldn't you wash the eggs, Professor?

THE PROFESSOR: No, McAlister. That would take off the protective coating of the egg -- the coating which tends to prevent spoiling.

If the egg is only slightly soiled, you might remove the stains with a cloth dampened with a little vinegar.

TRENT: Professor, how much does it cost to preserve eggs?

THE PROFESSOR: Well, let's take the water-glass or sodium silicate method -- that's a good method.

With the price of water-glass at about 30 cents a quart, you can make a solution for preserving for about 2 cents a dozen eggs.

TRENT: What strength solution do you use?

THE PROFESSOR: Use 1 quart of sodium silicate to 9 quarts of water that has been boiled and cooled. Put the mixture in a 5 gallon crock or jar -- that has been thoroughly cleaned and scalded. That will give you enough to preserve 15 dozen eggs. It will serve you as a guide for the amount needed to preserve a larger number of eggs.

TRENT: Suppose you don't have enough eggs -- when the solution is first made. You can add more eggs from time to time, can't you?

THE PROFESSOR: Yes. But be careful to allow at least two inches of the solution to cover the top layer of eggs -- at all times. Place the crock containing the preserved eggs in a cool dry place. Cover it well to prevent evaporation.

TRENT: How would you cover it?

THE PROFESSOR: Oh, a waxed paper tied over and around the top of the crock will answer the purpose.

Another good method of preserving eggs for home use is the lime method. It is especially useful on farms where lime is used for other purposes.

Dissolve 2 or 3 pounds of unslaked lime in 5 gallons of water that has been previously boiled and cooled. Allow the mixture to stand until the lime settles and the liquid is clear.

Then place clean, fresh eggs in a clean earthenware crock or jar and pour in the lime water until the eggs are covered --- at least two inches deep over the top layer of eggs. One fourth of a pound of salt is sometimes used with the lime -- but the salt is not necessary. (As if interrupted) Yes?

McALISTER: How about using a galvanized iron bucket for the eggs?

THE PROFESSOR: Galvanized iron containers are not suitable for preserving eggs in lime water. It's all right to use them in putting up the eggs in water glass, however.

McALISTER: Professor, cold storage is the best way to preserve eggs, isn't it?

THE PROFESSOR: Yes, It is. But it's not usually practical for preservin

eggs in a small way for home use.

But before you boil an egg that has been preserved in lime water or water glass, you should puncture the shell with a pin or needle to let the air out, so it won't crack.

Fresh, clean eggs, properly preserved can be used satisfactorily for all purposes in cooking and for the table.

But we'll talk about the place of eggs in the diet next week.

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UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION
U. S. RADIO FARM SCHOOL FIRST Wed. April 27.

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PROGRAM (NOT FOR PUBLICATION) RELEASE

SHORT COURSE: Brooding and Rearing Chickens.

LECTURE No.6: Raising Health Chicks.

ANNOUNCEMENT: The U. S. Radio Farm School will now present its lesson on brooding and rearing chickens. As you all realize, there is more profit in raising healthy chicks than unhealthy ones. This evening the Professor is going to tell us how to raise the healthy kind.

(The characters speaking during this lecture are: The Professor himself; and Taylor and Bruce, members of the class.)

* * * * *

TAYLOR: Hello, Bruce! How are the chickens?

BRUCE: Not so good.

TAYLOR: What's the trouble?

BRUCE: Well, I'll tell you, Taylor, chicks are harder to raise nowadays than they used to be.

TAYLOR: What do you mean 'harder to raise'?

BRUCE: Just what I said.

TAYLOR: Oh, you just think they are. How could they be?

BRUCE: I don't know. But I do know I have more trouble now than I used to have. I've heard a lot of other poultrymen say the same thing.

TAYLOR: That doesn't sound reasonable to me ------

BRUCE: Here comes the Professor. Ask him, if you don't believe me.

TAYLOR: Well, I will.

THE PROFESSOR: Hello, men, what's all the argument?

TAYLOR: Bruce, here, says that chicks are harder to raise than they used to be.

THE PROFESSOR: Yes, that's probably true in a lot of cases.

TAYLOR: Why so, Professor?

THE PROFESSOR: Well, more chicks are being raised under artificial conditions.

TAYLOR: What difference does that make?

THE PROFESSOR: The land on which the chickens are kept gets infested with disease germs and worm eggs. Also, chicks are often allowed to run with the old stock. They get lice from the old stock. Other troubles start when the houses are not disinfected regularly. In other cases, because of intensive breeding methods and lack of proper care in selecting breeding stock, the chicks lack the constitutional vigor to throw off disease, or to grow well even when they are fed and cared for properly. The first principle in raising healthy chicks is to use the greatest possible care in the selection of breeders to produce the hatching eggs. ----

TAYLOR: Yearling hens are better as breeders than pullets, aren't they?

THE PROFESSOR: Yes. Certainly. They usually lay bigger eggs which hatch into bigger chicks. They also generally have a rest in the fall. The pullets, you know, are usually fed so that they will produce the maximum number of eggs during the winter. As a result, chicks hatched from their eggs laid in the spring may lack vitality.

But, not only should you select yearlings, for breeding, but you should choose those yearlings from the standpoint of constitutional vigor and body type. Use only the most vigorous specimens. With proper care in the selection of your breeding stock and proper methods of incubation, you should get higher-quality chicks ---(As if interrupted) Well?

BRUCE: That's all right for selecting the breeders, Professor. But what I want to know, is how to raise the chicks that are already hatched?

THE PROFESSOR: Well, you should give your chicks wholesome feed. Improper feeding you know, is responsible for great deal of bowel trouble or other digestive ..... troubles. In some cases, it leads to the development of disease conditions. Chicks also need regular feeding.

BRUCE: How would you start them on feed?

THE PROFESSOR: You know, of course, chicks shouldn't be fed for about 60 hours after they are hatched. The egg yolk supplies them with their best first nourishment.

When you do start to feed, however, feed often --- but very little at a time. And always be sure all the feeds you give your chicks are of the best quality.

Green feed is particularly valuable. It tends to keep the chicks in good physical condition. Milk also has a decidedly beneficial effect.

TAYLOR: It's good to prevent coccidiosis, isn't it?

THE PROFESSOR: Yes. It has been demonstrated that a liberal feeding of milk tends to counteract coccidiosis.

But besides proper breeding and feeding, in order to raise healthy chicks, you must provide them with healthful surroundings. The houses in which the chicks have been brooded must be kept clean and sanitary at all times. It's a good plan to disinfect them thoroughly and often. And, of course, the brooders should be operated so the chicks will never get chilled or overheated.

You should remember that chicks get a good deal of their living off the floor of the house or off the ground. In other words, there is an excellent chance for them to pick up worm eggs and disease germs --- if there are many around.

Not only should you keep the houses clean --- but you should keep the soil over which the chicks range in a sweet and sanitary condition.

BRUCE: How are you going to do that, Professor?

THE PROFESSOR: Cultivate the soil often. Sow it to a green crop of some kind. Clean quarters and clean soil are absolutely necessary if you wish to have healthy chicks. You can not grow healthy chicks in dirty houses or on contaminated soil.

I wish you would all keep in mind the slogan poultrymen in Connecticut have adopted. I suppose you've heard that?

TAYLOR: What is it?

THE PROFESSOR: "Health Sticks to Clean Chicks."

Put that down in your note-books. That will help you remember it. "Health Sticks to Clean Chicks."

If you provide good sanitary surroundings, feed your chicks properly, and take care to see that they inherit constitutional vigor, you will have gone a long way toward securing the best success in chick raising. And please remember, "health sticks to clean chicks.

Next week we'll take up the question of separating the sexes and culling.

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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL. SECOND RELEASE Wed. April 27.

(NOT FOR PUBLICATION)

SHORT COURSE: Spring Problems in Poultry Management.

LECTURE No. 6: National Egg Week.

ANNOUNCEMENT: The second lesson of the Radio Farm School of the United States Department of Agriculture this evening will be about eggs. Heretofore, these lessons have been addressed to poultrymen. But now we will hear something about eggs which is important to every person who eats them -- and especially important to those who do not. Before the Professor opens the class, however, I've been asked to remind you that you can get the lessons of the United States Radio Farm School in printed form for handy reference by applying for them through this station.

(The characters speaking during this lecture are: The Professor himself; and Drake and Klein, members of the class.)

* * * * * *

(Three or four raps -- as if on desk)

THE PROFESSOR: Drake!

DRAKE: Yes, sir! ---

THE PROFESSOR: What is next week?

DRAKE: It's the first week in May.

THE PROFESSOR: Yes. And not only that. It's National Egg Week. The National Poultry Council has set it aside -- as a tribute to the hen. The hen that lays the golden eggs -------

As you all know, the humble hen helps you farmers to make a good living. Not only that, she makes a considerable contribution to the Nation's food supply.

To-day, the poultry industry ranks sixth in importance of all the agricultural industries. Its annual farm valuation runs considerably over a billion dollars.

Now, the fundamental reason for that, is that eggs are a valuable food for man. They are generously supplied by Nature with the necessary food elements -----

Drake, suppose you tell the class, what's in an egg?

DRAKE: It's rich in protein.

THE PROFESSOR: Yes. The edible portion of the whole egg contains somewhat over 13 per cent protein. The white is 12 per cent protein, and the yolk almost 16 per cent protein. But what good is protein?

DRAKE: That's the stuff that builds up muscle and body tissue, isn't it?

THE PROFESSOR: Yes. It's especially important for growing children. As you say, it furnishes the nitrogen needed to build and repair the body tissues. Foods of animal origin, such as milk, eggs, meat and fish are in general more valuable for that purpose than are foods of vegetable origin. What else is there in an egg?

DRAKE: Well, the yolk is rich in fat.

THE PROFESSOR: Yes. The yolk contains 23 per cent fat. Fat furnishes body fuel and energy-building material. As sources of energy in the human diet, eggs compare very favorably with other staple articles of food. The energy value of the whole egg averages 670 calories per pound. The yolk averages 1,645 calories and the white 230 calories per pound.

Are there any other food elements in an egg, besides fats and protein?

DRAKE: Yes, sir. There are minerals and vitamins.

THE PROFESSOR: That's right. And the mineral balance in the diet is a very important matter. The yolk of an egg contains 11 per cent lecithin, a phosphorus compound, and 3 per cent salts. The most important salts are those of calcium and iron.

In fact, egg yolks are so valuable as a source of iron, that they are often included in diets for that particular reason. Iron, you know, is an important element in your red blood corpuscles. Infants and children have especial need for iron -- in the right chemical form. They get it in the right form in eggs. Physicians in charge of infant feeding often recommend that raw eggs be included in the milk diet -- as early as six months of age. Yes, unquestionably, egg yolk is one of the best sources of iron ----(As if interrupted) Well, what is it, Klein?

KLEIN: Which are the most digestible? -- raw eggs or cooked eggs?

THE PROFESSOR: Eggs rank high in digestibility -- whether you eat them raw or cooked. The advantage is probably on the side of the slightly cooked egg ---- especially in the case of the egg white.

But while the way you cook them -- and the amount you cook them, may have something to do with the quickness with which they are digested, the thoroughness of digestion is apparently not affected.

Whether you eat them cooked or raw, they are one of the most completely digestible of foods. So much so, that they have a special value in the diet of children and invalids.

Now then, Klein, Drake has told us that eggs contain protein, and fat, and minerals; all elements that we need in our food. But there are other things in eggs which he didn't mention --------

KLEIN: There are vitamins in eggs.

THE PROFESSOR: Eggs-actly. The egg yolk is relatively rich in vitamins A. B. and D. Those mysterious substances must be present in foods in order for us to make use of some of the other food elements.

Suppose you tell the class, what vitamin A. does.

KLEIN: That has to be in our food, for us to grow properly.

THE PROFESSOR: Yes. That's sometimes referred to as the growth-promotion vitamin. How about B?

KLEIN: That helps digestion, doesn't it?

THE PROFESSOR: Yes. And Vitamin D?

KLEIN: Well-l-ll --- I don't believe I remember, Professor.

THE PROFESSOR: Leafy vegetables, cod-liver oil, and eggs all have it.

KLEIN: Oh, yes, that's the one that makes bones and teeth develop.

THE PROFESSOR: Eggs-actly. Many physicians now recommend the feeding of cod-liver oil or egg yolk or both to all infants -- commencing in many cases as early as two months. That's especially important in the case of babies born in big cities. You see, Vitamin D. has the same effect in preventing rickets or poor bone development as the sunshine does. Where the babies can't get to the sunshine, they must have Vitamin D in their food. And the sun's rays during the fall and winter months are not nearly so effective in preventing rickets as during the summer months. So eggs help take their place.

In fact, with its vitamins, minerals, fats, and protein, the egg is a wonderful food, put up in Nature's own original package -- and ready to use. Next week is National Egg Week. Celebrate by getting your share of the good things in eggs.

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